

CLAIMS

What is claimed is:

1. An optical device comprising:
 - a plurality of needles having channels;
 - 5 a plurality of fibers inserted in the plurality of needles; and
 - a plurality of optical components aligned and connected with the plurality of fibers.
2. The optical device of Claim 1 wherein the needles are microneedles.
3. The optical device of Claim 1 wherein the optical components are vertical cavity
10 surface emitting lasers.
4. The optical device of Claim 1 wherein the optical components are photodetectors.
5. The optical device of Claim 1 further comprising a plurality of photodetectors.
6. The optical device of Claim 1 further comprising a sensing element.
- 15 7. A method for forming an optical device including a vertical cavity surface emitting laser (VCSEL) array and a fiber array, the method comprising:
 - aligning the fiber array and VCSEL array;
 - joining the fiber array and VCSEL array;
 - reflowing solder on the VCSEL array; and
 - 20 applying underfill between the fiber array and VCSEL array.